



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/914,356      | 08/27/2001  | Nobuyoshi Nambu      | 0052/059001         | 3696             |

22893 7590 12/15/2003

SMITH PATENT OFFICE  
1901 PENNSYLVANIA AVENUE N W  
SUITE 200  
WASHINGTON, DC 20006

|          |
|----------|
| EXAMINER |
|----------|

GRAY, JILL M

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1774

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

eb11

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/914,356 | <b>Applicant(s)</b><br>NAMBU ET AL. |  |
|                              | <b>Examiner</b><br>Jill M. Gray      | <b>Art Unit</b><br>1774             |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

The rejection of claims 1-18 under 35 U.S.C. 102(e) as being anticipated by Nambu et al, 6,168,863 B1 is withdrawn in view of applicants' arguments.

The rejection of claims 1-18 under the judicially created doctrine of obviousness-type double patenting is withdrawn in view of applicants' arguments.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-18 are rejected under 35 U.S.C. 102(a) as being anticipated by PCT Publication No. WO98/16680, (the publication) for reasons of record.

### ***Response to Arguments***

Applicant's arguments filed September 25, 2003 have been fully considered but they are not persuasive.

Applicants argue that the metal chelate forming compound in the present invention is bonded to the fiber through the graft reaction product, whereas the metal chelate forming compound of WO98/16680 is directly bonded to a fiber.

In this concern, it is noted that the translated document of WO98/16680 teaches that reactive functional groups can be introduced onto the fiber by any treatment such as graft polymerization. Wherein it is those functional groups that are bonded to the

metal chelate forming compound. Accordingly, WO98/16680 does in fact teach metal chelate compounds bonded to the fiber through a graft reaction product. See column 4, of translation.

Applicants argue the metal chelate forming compound can be introduced into the natural or regenerated fiber in a higher ratio.

In response thereto, it should be noted that the WO98/16680 translation teaches that the amount of the metal compound can be controlled and introduced into the fiber molecules at substitution rates of 100 to 200 wt%. Hence, WO98/16680 in the translation teaches introducing the metal compound into the fiber at higher ratios as well. See column 4 of translation.

Applicants argue that claims 1 and 15-18 recite, "epoxy group is bonded to a fiber..." and that these features are not obvious in the prior art.

In this concern, the examiner has interpreted claim 1 to mean/recite that it is the metal chelate compounds that are bonded to the fiber molecule and that the compounds, selected from the requisite group are reactive to the epoxy group – not that an epoxy group is bonded to the fiber molecule. Accordingly, the metal compounds of WO98/16680 are also reactive to epoxy groups.

Applicants argue that WO98/16680 does not disclose epoxy groups bonded to a fiber molecule through a graft reaction product.

In this concern, as set forth above, claim 1 does not clearly specify that the fiber has an reactive epoxy group attached thereon, said reactive epoxy being the product of the reaction between a compound with double bonds and a glycidyl group.

Applicants argue that it is not apparent whether or not the reactive functional group can be introduced into the fiber efficiently in the publication, whereas in the present invention, the glycidyl group is disclosed as being possible to introduce into each repeating unit of the crosslinkable compounds which constitute the graft polymer, thus making it possible to increase the introduced amount of the metal chelate forming compound.

In this regard, arguments drawn to the relatively operability of the prior art are not germane.

No claims are allowed.

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill M. Gray whose telephone number is 703.308.2381. The examiner can normally be reached on M-F 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 703.308.0449. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0651.



jmg

Jill M. Gray  
Examiner  
Art Unit 1774

CYNTHIA M. KELLY  
SUPERVISOR  
TECHNOLOGY CENTER 1700

